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REMARKS/ARGUMENTS

The Examiner is thanked for the careful review of the application as set out in the outstanding office action. Reconsideration of the application is respectfully requested.

Claims 1-18 and 20-22 are pending in the application.

Claims 2 and 11 have been allowed.

Claims 1, 3-10, 12-18 and 20-22 stand rejected variously under Section 103 based on Dunand in various combinations with Kato, Maeda, Yen or Takagi.

Interview Summary

A telephone interview was conducted between the undersigned and Examiner Nguyen on September 15, 2006. During the interview, Claim 1 was discussed, with Dunand and Kato. No agreement was reached.

Claims Rejections - 35 USC 103

Claims 1, 3-5, 10 and 12-14 have been rejected as allegedly being unpatentable over Dunand (6398334) in view of Kato (6450606).

During the telephone interview, the Examiner indicated that Kato was cited only for disclosing visual detection by a user of a diagnostic pattern, e.g. for Claim 4.

Dunand describes a process for compensation of a defect in the advance of a print substrate by modifying the arrival position of ink droplets with a variable electrical charge on the substrate. Each band of droplets is printed with a mark on the margin or edge of the substrate, the substrate is advanced to print the next band, an algebraic difference is determined between a nominal theoretical position of the mark and the real position of the mark, a correction to the value of

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the charge voltage to be applied to each droplet to compensate for the position error is determined, and the substrate correction is applied to each droplet in the next band, in addition to the nominal voltage. (Abstract) Thus, the printing of the mark is performed during printing of normal print jobs.

That the printing of the marginal marks is performed during printing of normal print jobs is confirmed throughout Dunand. Examples are quoted below:

The pattern to be printed is described by a numeric file... The numeric file representing the colored pattern to be printed is firstly split into several binary patterns (or bitmaps) for each ink... Part of the binary pattern is extracted from the file for each jet corresponding to the width of the band that will be printed... FIG. 2, which shows the control electronics of a jet, shows a memory 1 in which the numeric pattern cut into bands is stored, this storage memory containing information about a color. For printing each band, an intermediate memory 2 contains the data necessary for printing the band with the said color. [Dunand, at 2:49-67]

According to the invention, a mark will be printed when printing each current band. This mark may consist of a single line printed by one or several droplets that may or may not be in consecutive rows. After the substrate has been advanced to print the next band, the error e_x will be determined as the difference between the nominal position and the real position of the mark, corresponding to a difference in the advance of the substrate. [Dunand, at 4:48-55, emphasis added]

As explained above, this result will be obtained by printing a first mark shown at A in FIG. 4 when printing a current band. This mark may be composed of a single line printed using one or several droplets in a subsequent row. [Dunand, at 7:9-12, emphasis added]

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The cyan head 25 prints the mark 51-1 before a first band mark 1 is printed. This same cyan head then prints the band 1 in the scanning direction shown by an arrow in the direction Y. [Dunand, at 9:3-6]

a current band is printed with a first mark on the substrate,
an algebraic difference is determined between a nominal theoretical position of the mark and the real position of the mark [Dunand, at Claim 1, 13:41-45, emphasis added]

Without conceding the appropriateness of the outstanding rejections, Claims 1, 3, 4, 6, 8, 9, 10, 13, 15, 17, 18 and 20-22 have been amended to further distinguish the claimed subject matter from Dunand, to even more clearly recite that the printing of the diagnostic pattern occurs without any intervening printing of a normal print job. Applicants respectfully submit that with these amendments, the outstanding rejections of these claims has been mooted, and that the rejections should be withdrawn.

Claim 1:

Claim 1 recites a diagnostic method for visual detection of poor media advance calibration in an ink-jet printing system, comprising:

entering a diagnostic mode of the printing system in which mode normal printing jobs of the printing system are not printed;

while in said diagnostic mode, printing different areas of a diagnostic pattern at different passes of one or more ink-jet printheads with a controlled amount of media advances between the passes, to accumulate media advance error between the printing of the different areas, said printing different areas of a diagnostic pattern is performed without any intervening printing of a normal print job; and

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examining the diagnostic pattern to determine whether the accumulated media advance error is sufficiently objectionable to take corrective action.

Dunand does not disclose entering a diagnostic mode as recited in Claim 1. This is clear from the above quoted passages of Dunand. Instead, the marginal marks of Dunand are printed while printing normal print jobs, as established by the excerpts from Dunand quoted above. For this reason alone, a prima facie case of anticipation has not been established, and the rejection should be reversed.

That Dunand does not disclose entering a diagnostic mode as recited in Claim 1 was undisputed by the Primary Examiner until the June 30, 2005 office action. For example, in the office action mailed June 21, 2004, at page 2, the Examiner stated, regarding Claim 1, "Dunand does not disclose the step of entering into a diagnostic mode of the printing system in which mode normal printing jobs of the printing system are not printed..." In the Office Action of June 30, 2005, however, the Examiner now states "Dunand discloses a diagnostic method ... comprising... entering into a diagnostic mode of the printing system in which mode normal printing jobs of the printing system are not printed (column 10, lines 13-32: The printer is being in the mode for printing a pattern of marks in which the printer prints the pattern marks (such as a dummy mark (column 7, lines 14-16) not in accordance to received image data as in the normal mode..."

The Examiner points to two passages in Dunand as supporting the position that Dunand describes entering a diagnostic mode of the printing system as recited in Claim 1. These are set out below:

To prevent this type of overlapping, the printed pattern of marks in the even row is different from the pattern of marks in the odd row. Another case in which it is useful to distinguish the current mark from the next mark is the case in which these two marks would be simultaneously visible on

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detector 12, for example one on an extreme part of the detector on the input side and the other on an extreme part of the detector on the output side along the direction in which the substrate is moving. This situation can arise if the accumulated advance error reaches a positive value or negative value equal to half a nominal advance. In this case, the program will choose to use the reference mark to print the next band.

If a blockage or quasi-blockage is detected, the program could trigger another substrate advance command and then trigger an alert if the blockage is detected again, or otherwise immediately trigger an alarm.

The pattern of marks in even row bands and odd row bands will depend on the detector. [Dunand, at 10:13-32]

After the substrate has advanced, mark A is moved and occupies the position shown at B in FIG. 4. In order to materialize the error e_x in the substrate advance, the position of a dummy mark has also been shown at C representing the nominal position that mark A would have had if there had been no difference between the nominal position and the real position. [Dunand at 7:13-17]

Applicants respectfully submit that the passages identified by the Examiner fail to provide evidentiary support for the rejection. The passage at 10:13-32 concerns the problem of an unplanned blockage of the substrate advance. "If the substrate is blocked, the mark printed while printing a current band [i.e. a print job] and that will be used as a position reference for printing the next band, will not arrive in the field of view of the detector 12. Therefore, the detector 12 will reuse the mark that was used for printing the current band with the same corrections, such that if the blockage or quasi-blockage of the substrate is not detected, the next band will be printed overlapping the previous band." Dunand at 10:5-12. To address this problem, Dunand describes that the printed pattern of marks in the even row is different from the pattern of marks printed in the odd row. Dunand at 10:13-16. The passage at column 10 identified by the Examiner

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thus fails to support the rejection; the marks printed in the margin are printed during printing of a normal print job.

The passage at column 7, lines 14-16, also does not support the rejection. The reference to a dummy mark is to a nominal position of a mark; the dummy mark is not a mark which is printed. See, 7: 18-19 ("The mark C is not present on the substrate in a real manner.")

Kato is directed to color calibration techniques, and does not address the problem of poor media advance calibration.

Claim 3:

Claim 3 is drawn to a diagnostic method for visual detection of poor media advance calibration in an ink-jet printing system, comprising:

during a diagnostic mode of the printing system in which normal printing jobs of the printing system are not printed, printing different areas of a diagnostic pattern at different passes of one or more ink-jet printheads with a controlled amount of media advances between the passes without any intervening printing of a normal print job, to accumulate media advance error between the printing of the different areas, wherein said different areas are nominally aligned along a horizontal line; and

examining the diagnostic pattern to determine whether the accumulated media advance error is sufficiently objectionable to take corrective action.

A prima facie case of obviousness of the subject matter of Claim 3 has not been established, for reasons similar to those just discussed regarding Claim 1. Moreover, the Examiner alleges that Dunand discloses printing different areas of a diagnostic pattern at different passes of one or more printheads with a controlled amount of media advances between the passes, wherein the different areas are nominally aligned along a horizontal line, referring to Dunand at column 5, lines 9-15, stating that "The different areas are the area of the current band and the next band, wherein the bands are aligned either along the direction of

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scanning of the head or the direction of advance of the substrate." (Office action, at paragraph bridging pages 2-3).

Appellants respectfully disagree. The quoted passage does not support the interpretation asserted by the Examiner, and is set out below:

a current band is printed with a first mark on the substrate,
the substrate is advanced to print the next band,
and algebraic difference is determined between a nominal
theoretical position of the mark and the real position of the mark,

The interpretation that the bands are aligned either along the direction of scanning of the head or the direction of advance of the substrate is not addressed by the quoted passage.

Moreover, the "different areas" asserted by the Examiner are areas of the normal print job, not of the marks printed in the margin, and so it is clear that the process occurs during printing of a normal print job.

Dunand does not describe the feature in Claim 3 that "wherein said different areas are nominally aligned along a horizontal line." In Dunand, the marginal marks printed with the bands and which are printed in different passes are not in a horizontal line.

Each mark in Dunand is printed in a single pass, not at different passes.

Claim 4:

Claim 4 is drawn to a diagnostic method for visual detection of poor media advance calibration in an ink-jet printing system, comprising:

printing different areas of a diagnostic pattern at different passes of one or more ink-jet printheads with a controlled amount of media advances between the passes, to accumulate media advance error between the printing of the different areas; and

examining the diagnostic pattern to determine whether the accumulated media advance error is sufficiently objectionable to take

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corrective action, wherein said step of examining the diagnostic pattern is conducted visually by a user.

The rejection of Claim 4 should be reversed because Dunand does not describe the feature that "said step of examining the diagnostic pattern is conducted visually by a user." In Dunand, the marginal marks are examined by an optical sensor for each successive band, and the examining is not conducted by a user. The reference describes printing a mark on each swath during normal printing, and measuring the position of that mark against its nominal position. Moreover, visual detection of a diagnostic pattern by a user as allegedly disclosed by Kato is not compatible with the printing technique of Dunand. Visual detection of the margin lines printed by Dunand during the normal printing mode would slow down the printing operation to a degree that it would simply never be used. There is no logical reason supporting the alleged combination of references. Indeed, a user would be extremely unlikely to be able to visually measure the position of a mark against some nominal position, and printing speed would be slowed to a virtual crawl, since a measurement is made on each swath.

Claim 10:

Claim 10 is drawn to a diagnostic method for visual detection of poor media advance calibration in an ink-jet printing system, comprising:

- providing an ink-jet printhead mounted on a carriage, the carriage mounted for movement along a scan axis;

- providing a media advance system for advancing a print medium along a media path which is transverse to the scan axis;

- entering a diagnostic multi-pass print mode in which mode normal printing jobs of the printing system are not printed;

- printing different areas of a diagnostic plot at different passes using said ink-jet printhead with a controlled amount of media advances between the passes to accumulate media advance error between the printing of

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the different areas without any intervening printing of a normal print job;
and

examining the diagnostic plot to determine whether the accumulated media advance error is sufficiently objectionable to take corrective action.

The rejection of Claim 10 should be withdrawn for reasons similar to those discussed above regarding Claim 1.

Claim 12:

Claim 12 depends from Claim 10, and further recites that "said different areas are nominally aligned along a horizontal line." The rejection of Claim 12 should be withdrawn for reasons similar to those discussed above regarding Claim 3.

Claim 13:

Claim 13 is drawn to a diagnostic method for visual detection of poor media advance calibration in an ink-jet printing system, comprising:

providing an ink-jet printhead mounted on a carriage, the carriage mounted for movement along a scan axis;

providing a media advance system for advancing a print medium along a media path which is transverse to the scan axis;

entering a diagnostic multi-pass print mode;

printing different areas of a diagnostic plot at different passes using said ink-jet printhead with a controlled amount of media advances between the passes to accumulate media advance error between the printing of the different areas without any intervening printing of a normal print job; and

examining the diagnostic plot to determine whether the accumulated media advance error is sufficiently objectionable to take corrective action, wherein said step of examining the diagnostic pattern is conducted visually by a user.

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Similar considerations apply to Claim 13, as well as to Claim 14 depending from Claim 13, as discussed above regarding Claims 1 and 4.

The Rejection of Claims 7 and 16

Claims 7 and 16 stand rejected under 35 USC 103 as being unpatentable over Dunand in view of Kato and Maeda (US 6334659). This ground of rejection is respectfully traversed, for reasons discussed above regarding Claims 1 and 10. A prima facie case of obviousness has not been established.

Claim 7:

Claim 7 depends from Claim 1, and further recites that the step of printing different areas of a diagnostic plot includes:

applying a diagnostic multi-pass print mode mask, wherein a plurality of carriage passes are employed to print the area subtended by a printhead nozzle array, the diagnostic print mode mask comprising a rectilinear grid of pixels, with each pixel location having a number associated therewith, the number representing the pass in which the pixel will be printed, and wherein said different areas include a first set of pixels on a row of said grid, and a second set of pixels on said row, and wherein said first set of pixels is printed on a different pass than said second set of pixels is printed.

Claim 16:

Claim 16 depends from Claim 10, and further recites that the step of printing different areas of a diagnostic plot includes:

applying a diagnostic multi-pass print mode mask, wherein a plurality of carriage passes are employed to print the area subtended by a printhead nozzle array, the diagnostic print mode mask comprising a rectilinear grid of pixels, with each pixel location having a number associated therewith, the number representing the pass in which the pixel

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will be printed, and wherein said different areas include a first set of pixels on a row of said grid, and a second set of pixels on said row, and wherein said first set of pixels is printed on a different pass than said second set of pixels is printed.

The Examiner agrees that Dunand or Kato does not disclose the features of dependent Claims 7 and 16. Maeda is cited as allegedly showing printing different areas of a diagnostic plot. Appellants respectfully disagree with the recitation of the alleged teachings of Maeda. The embodiment illustrated in FIGS. 7-10 of Maeda is directed to the problem of an ink drawing phenomenon causing bleeding, resulting from laying down a dot right next to a just previously deposited dot. By depositing respective dots in a checkerboard fashion, the ink drawing phenomenon is said to be avoided. FIGS. 10A-10D show the technique of checkerboard printing using respective mask patterns. See, Maeda at 10:35 to 11:54.

The passages of Maeda cited by the Examiner do not pertain to a "diagnostic plot," or a "diagnostic multi-pass print mode mask," but rather to techniques of printing to avoid bleed during normal print operations.

Because Dunand admittedly does not show the features of Claims 7 and 16, and because Maeda does not supply the missing teachings of these claims, a prima facie case of obviousness has not been established. Appellants respectfully submit that the combination of references to form the grounds for the rejection is the product of improper hindsight reconstruction.

The Examiner further states that it would have been obvious to include the applying of a diagnostic multi-pass print mode mask as allegedly disclosed by Maeda into the advance control process as disclosed by Dunand, and that the motivation for doing so is to reduce the formed bind pitch to less than paper transport width without increasing the number of scans, so that banding artifacts are imperceptible as taught by Maeda at 4:4-10. The problem addressed by Maeda has nothing to do with the problem of media advance errors, and so the

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motivation asserted by the Examiner would not lead one to the solution set out in Claims 7 and 16. The rejection of Claims 7 and 16 should be withdrawn.

The Rejection of Claims 8-9, 17-18, and 20-21

These claims are rejected as being unpatentable over Dunand in view of Kato and Yen. This rejection should be withdrawn, on the grounds that a prima facie case of obviousness has not been established, and the applied references do not teach or suggest the claimed invention.

Claim 8:

Claim 8 is drawn to a diagnostic method for visual detection of poor media advance calibration in an ink-jet printing system, comprising:

during a diagnostic mode of the printing system in which normal printing jobs of the printing system are not printed, printing different areas of a diagnostic pattern at different passes of one or more ink-jet printheads with a controlled amount of media advances between the passes without any intervening printing of a normal print job, to accumulate media advance error between the printing of the different areas, said printing different areas of a diagnostic pattern comprising applying a diagnostic multi-pass print mode mask, wherein a plurality of carriage passes are employed to print the area subtended by a printhead nozzle array, the diagnostic print mode mask comprising a rectilinear grid of pixels and a row width of w pixels, and wherein said different areas include a first set of pixels on a row of said grid, and a second set of pixels on said row, and wherein said first set of pixels is printed on a different pass than said second set of pixels is printed, and wherein said diagnostic print mode mask defines that the first $w/2$ pixels in the row are printed in the same pass (a_i), and the last $w/2$ pixels in the row are printed in another pass (b_i); and

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examining the diagnostic pattern to determine whether the accumulated media advance error is sufficiently objectionable to take corrective action.

Dunand and Kato have been discussed above, and does not teach or suggest the features of these claims, for reasons similar to those discussed above regarding Claim 1 and 10.

Yen is cited as allegedly disclosing "printing patterns including the first w/2 pixels in the row are printed in the same pass, and the last w/2 pixels in the row are printed in another pass, wherein said diagnostic print mode mask includes a row wherein said first w/2 pixels are printed in a first pass, and said last w/2 pixels are printed in a last pass of said plurality of passes (FIG. 6), and wherein said different areas are nominally aligned along a horizontal line (FIG. 3)." Appellants respectfully deny that Yen discloses the foregoing teachings.

The Examiner holds that it would have been obvious to "modify the diagnostic print pattern disclosed by Gast, as modified, such as the first w/2 pixels are printed in a first pass and the last w/2 pixels are printed in a last pass of said plurality of passes as allegedly disclosed by Yen et al. The motivation of doing so is to eliminate unpleasant banding artifacts caused by ink migration as taught by Yen et al. (Abstract)." Appellants respectfully disagree with this holding.

Yen discloses a mask pattern having 4 by 4 triangular tiling clusters, as shown in FIG. 6, which provide a balance between reduction of banding artifacts and increase in image granularity. The mask pattern is not described as a diagnostic print mask, nor does Yen describe printing a diagnostic pattern. The Examiner refers to FIG. 3 as allegedly disclosing "said different areas are nominally aligned along a horizontal line," yet FIG. 3 is said to be a printed image produced by an inkjet printer, effectively 60x magnified to show a banding phenomenon. (Yen at 1: 61-65) It is not seen how this figure supports the Examiner's contentions.

Further, there appears no logical reason to modify Dunand as suggested by the Examiner. Ink migration is not a problem addressed by Dunand's media

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advance calibration. Here again, the rejection appears to be the product of attempted improper hindsight reconstruction, without reasoning clearly supporting the modification.

Similar considerations apply to Claims 9, 17 and 18.

Claim 20:

Claim 20 is drawn to a multi-pass diagnostic print mode mask for printing a diagnostic plot to enhance visual detection of poor media advance calibration in an ink-jet printing system including a printhead having a nozzle array, wherein a plurality of carriage passes are employed to print the area subtended by a printhead nozzle array, the diagnostic print mode mask comprising a rectilinear grid of pixels and a row width of w pixels, with each pixel location having a number associated therewith, the number representing the pass in which the pixel will be printed, and wherein said different areas include a first set of pixels on a row of said grid, and a second set of pixels on said row, and wherein said first set of pixels is printed on a different pass than said second set of pixels is printed, wherein said diagnostic print mode mask defining that the first $w/2$ pixels in the row are printed in the same pass (a_1), and the last $w/2$ pixels in the row are printed in another pass (b_1), and wherein the diagnostic plot is printed without any intervening printing of a normal print job.

Dunand or Kato do not disclose a diagnostic print mode mask as recited in Claims 20-21.

The Examiner alleges that Yen discloses a diagnostic print mode mask, referring to FIG. 6 of Yen. However, FIG. 6 appears to show a print mask which is used during normal printing, and not a diagnostic print mode mask as recited in Claim 20. A prima facie case of obviousness has not been established, and the rejection of Claim 20 should be withdrawn.

Similar considerations apply to Claim 21.

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The Rejection of Claims 6, 15 and 22

These claims have been rejected as being unpatentable over Dunand in view of Kato and Takagi. This rejection should be withdrawn, on the grounds that a prima facie case of obviousness has not been established, and the references do not teach or suggest the claimed invention.

Claim 6:

Claim 6 is drawn to a diagnostic method for visual detection of poor media advance calibration in an ink-jet printing system, comprising:

- checking for printhead health and taking any corrective needed action to recover nozzle health;

- during a diagnostic mode in which normal printing jobs of the printing system are not printed, printing different areas of a diagnostic pattern at different passes of one or more ink-jet printheads with a controlled amount of media advances between the passes without any intervening printing of a normal print job, to accumulate media advance error between the printing of the different areas; and

- examining the diagnostic pattern to determine whether the accumulated media advance error is sufficiently objectionable to take corrective action.

Dunand and Kato has been addressed above. Dunand and Kato do not describe checking for printhead health and taking any corrective needed action to recover nozzle health.

Takagi describes a recording apparatus to perform complementary recording to eliminate a white streak caused by recording elements becoming incapable of recording. Preceding printing, abnormal nozzles are detected, and data related to the abnormal nozzles are removed. One scan printing is performed in accordance with such data. Preceding the returning operation of the printing head subsequent to the one scan, a sub-scanning operation is performed so that normal nozzles are positioned in a location corresponding to the white streak appearing in the one scan printing. While returning the printing

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head, the printing is performed in accordance with such data related to the abnormal nozzles detected at the time of one scan, hence executing a complementary recording appropriately. (Takagi, Abstract)

Takagi thus has nothing to do with the problem of poor media advance calibration in an ink-jet printing system. Instead, Takagi addresses a case in which a nozzle of the printhead is not printing normally. The diagnostic mode of Takagi does not print different areas of a diagnostic pattern at different passes with a controlled amount of media advance between the passes, to accumulate media advance error. Nor is there any teaching in Takagi to examine a diagnostic pattern to determine whether the accumulated media advance error is sufficiently objectionable to take corrective action.

The Examiner states that it would have been obvious to modify "the printing process disclosed by Dunand and Kato, such that including the step of entering diagnostic mode that checks printhead health and takes any corrective needed action as disclosed by Takagi et al. The motivation of doing so is to provide a liquid discharge apparatus capable of obtaining the desired result of discharges without any defects even when non-discharge or another malfunction occurs in the discharging means as taught by Takagi (*column 3, lines 60-65*)."

(Page 7 of Office action) Appellants respectfully disagree.

Modifying Dunand with teachings of Takagi and Kato would at most result in a printing system with a diagnostic mode having an abnormal nozzle detection scheme, and using a sub-scanning operation to fill in white streaks caused by the abnormal nozzle. The diagnostic method of Claim 6 still does not result from the purported modification.

Claim 6 is even further distinguished from the combination of Dunand, Kato and Takagi because Takagi does not take any needed corrective action to recover nozzle health. The Examiner asserts that Takagi teaches corrective action to recover nozzle health prior to printing, stating that removing data related to abnormal nozzles recovers nozzle health. Appellants disagree; removing the data related to abnormal nozzles does not recover the nozzle health; rather this action merely results in the abnormal nozzles not being used.

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Claim 15:

Claim 15 is drawn to a diagnostic method for visual detection of poor media advance calibration in an ink-jet printing system, comprising:

providing an ink-jet printhead mounted on a carriage, the carriage mounted for movement along a scan axis;

providing a media advance system for advancing a print medium along a media path which is transverse to the scan axis;

entering a diagnostic multi-pass print mode;

checking for printhead health and taking any corrective needed action prior to printing a diagnostic pattern;

printing different areas of the diagnostic plot at different passes using said ink-jet printhead with a controlled amount of media advances between the passes to accumulate media advance error between the printing of the different areas without any intervening printing of a normal print job; and

examining the diagnostic plot to determine whether the accumulated media advance error is sufficiently objectionable to take corrective action.

The rejection of Claim 15 should be reversed for the reasons discussed above regarding Claim 10, and further because the applied references do not teach or suggest "checking for printhead health and taking any corrective needed action prior to printing a diagnostic pattern" as discussed regarding Claim 6.

Claim 22:

Claim 22 is drawn to a diagnostic method for improving print quality in an ink-jet printing system, comprising:

providing an ink-jet printhead mounted on a carriage, the carriage mounted for movement along a scan axis;

providing a media advance system for advancing a print medium along a media path which is transverse to the scan axis;

entering a diagnostic multi-pass print mode;

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determining whether the nozzle array has good health;

if the nozzle array has good health, printing different areas of a diagnostic plot at different passes using said ink-jet printhead with a controlled amount of media advances between the passes to accumulate media advance error between the printing of the different areas without any intervening printing of a normal print job; and

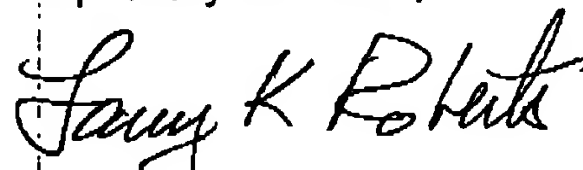
examining the diagnostic plot to determine whether the accumulated media advance error is sufficiently objectionable to take corrective action.

The rejection of Claim 22 should be reversed for the reasons discussed above regarding Claim 10, and further because the applied references do not determine whether the nozzle array has good health, and if the nozzle array has good health, printing different areas of a diagnostic plot as recited in Claim 22.

CONCLUSION

The outstanding rejections should be withdrawn. A prima facie case of obviousness has not been established. The applied references alone or in combination do not teach or suggest the claimed invention. Applicants respectfully submit that the application should be allowed.

Respectfully submitted,



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